

V-2

09/227,174



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/227,174	01/07/99	PIAZZA	T 42390.P6702

LM02/1004
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EXAMINER

LEE, R

ART UNIT	PAPER NUMBER
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2713

DATE MAILED:

10/04/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

SK

Office Action Summary

Application No.
09/227,174

Applicant(s)
Piazza et al

Examiner
Richard Lee

Group Art Unit
2713



☐ Responsive to communication(s) filed on _____.

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-16 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-16 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 4, 6

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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1. The Examiner wants to point out that the PCT International Search Report as cited on the PTO-1449 IDS filed July 27, 2000 has not been considered by the Examiner since the search report is not a publication. A line has been drawn through the citation accordingly for non conformance.

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 250 words. It is important that the abstract not exceed 250 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because phrases which can be implied, such as "the invention" appearing at line 2 of the Abstract should be avoided. Correction is required. See MPEP § 608.01(b).

4. The drawings are objected to because block element "856" as shown in Figure 8 of the drawings have not been identified in the Specification. Correction is required.

5. Claims 2, 3, 7, and 8 are objected to because of the following informalities:

(1) claim 2, line 1, after "claim 1", "wherein" should be inserted for clarity;

(2) claim 3, line 1, after "claim 1", "wherein" should be inserted for clarity;

(3) claim 7, line 1, after "claim 6", "wherein" should be inserted for clarity;

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(4) claim 8, line 1, after "claim 6", "wherein" should be inserted for clarity.

Appropriate correction is required.

6. Claims 11-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

At claim 11, line 6, "the texture palette" shows no clear antecedent basis.

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

8. Claims 11-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Mizobata et al of record (5,892,518).

Mizobata et al discloses an image generating apparatus with pixel calculation circuit including texture mapping and motion compensation as shown in Figures 1, 2, 4A, 4B, 9, 10-12, 14A, 14B, 16, 17, 19A, 19B, 21, 22, 40, 41, and 43, and the same circuit for generating motion compensated video as claimed in claims 11-13, the circuit comprising the same command stream controller (201 of Figure 2) coupled to receive an instruction to manipulate motion compensated video data (see columns 28-30); a write address generator (i.e., within 212 of Figure 2) coupled to the command stream controller; a memory (i.e., 204 of Figure 2) coupled to the command

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stream controller and to the write address generator, the texture palette to store pixel data in a first order determined by the write address generator, wherein the first order is block-by-block row major order (see columns 28-30); processing circuitry (see Figure 2) coupled to the write address generator to receive control information and data from the command stream controller to generate a reconstructed video frame (see columns 28-30); and a read address generator (i.e., within 211 of Figure 2) coupled to the processing circuitry and to the memory, the read address generator to cause the memory to output pixel data in a second order (see columns 28-30); wherein the first order corresponds to an output sequence of an inverse discrete cosine transform operation (see 106 of Figure 1).

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-10, and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizobata et al as applied to claims 11-13 in the above paragraph (8), and further in view of Lee et al (5,748,789).

Mizobata et al discloses substantially the same circuit for generating motion compensated video as above, further including means for receiving a motion compensation command (i.e., 201 of Figure 2) having associated correction data (i.e., output of 3003 of Figure 40); means (3004 of Figure 40) for storing the correction data in a memory according to a first order corresponding to

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the motion compensation command; means (i.e., ³⁰¹³3103 of Figure 40) for performing frame prediction operations in response to the motion compensation command; means (i.e., 3004 of Figure 40) for reading the correction data from the memory according to a second order; means (i.e., 3010 of Figure 40) for combining the correction data with results from the frame prediction to generate an output video frame; wherein performing frame prediction operations further comprises means for generating a bounding box, means for iterating the bounding box, means for fetching reference pixels, means for filtering the reference pixels, means for averaging the filtered reference pixels, if necessary, and means for adding correction data to the reference pixels (see 3009, 3010 of Figure 40, Figures 9-12, 41-43); wherein the motion compensation data includes at least one motion vector (see 3605 of Figure 39); means for performing texturing operations (see Figures 10-12, and columns 28-30); and wherein the processing circuitry comprises a windower having a first mode wherein pixels inside a triangle within a bounding box are processed (see Figures 12 and 41).

Mizobata et al does not particularly disclose, though, the followings:

(a) receiving a motion compensation command having associated correction data related to a macroblock, generating a bounding box containing the macroblock, performing texturing operations for the macroblock as claimed in claims 1, 3, 5, 6, 8, and 10; and

(b) wherein the second order is sub-block-by-sub-block row major order, wherein the processing circuitry comprises a setup engine that determines a bounding box for pixels manipulated by the instruction, wherein the bounding box contains all edges of a macroblock, and

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wherein the processing circuitry comprises a windower having a second mode wherein all pixels within a bounding box are processed as claimed in claims 14-16.

Regarding (a) and (b), Lee et al discloses a transparent block skipping in object-based video coding systems as shown in Figures 16, 27A, 27B, 28, 30B, 31, 35, and 36-39, and teaches the conventional macroblock processings for motion compensation, a bounding box, and texture operations (see 1540, 1542, 1546 of Figure 35, 1616 of Figure 37, and column 43, line 51 to column 44), as well as subblock processings (386a-d of Figure 16) and processing circuitry comprising a setup engine that determines a bounding box (see Figure 35 and column 43, line 51 to column 44) for pixels manipulated by the instruction, wherein the bounding box contains all edges of a macroblock, and wherein the processing circuitry comprises a windower having a second mode wherein all pixels within a bounding box are processed. Therefore, it would have been obvious to one of ordinary skill in the art, having the Mizobata et al and Lee et al references in front of him/her and the general knowledge of motion compensation and texture image processings, would have had no difficulty in providing the subblock and macroblock processings as well as processing circuitry involving the determination of a bounding box for manipulating pixels thereby containing all edges of a macroblock as taught by Lee et al for the motion compensation and texture operation system of Mizobata et al for the same well known purposes as claimed.

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11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chen et al discloses a separate shape and texture coding of transparency data for video coding applications.

Eifrig et al (5,991,447) discloses a prediction and coding of bi-directionally predicted video object planes for interlaced digital video.

Eifrig et al (5,974,184) discloses an intra-macroblock DC and Ac coefficient prediction for interlaced digital video.

Piazza et al discloses a method and apparatus to efficiently interpolate polygon attributes in two dimensions at a prescribed clock rate.

Szeliski et al discloses a texture map construction method and apparatus for displaying panoramic image mosaics.

12. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications intended for entry)

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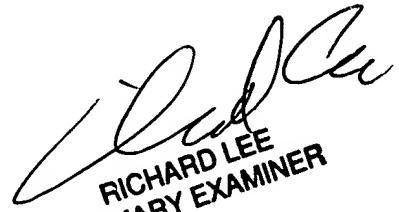
Or:

(703) 308-5359 (for informal or draft communications, please label
"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington. VA., Sixth Floor (Receptionist).

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Lee whose telephone number is (703) 308-6612.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.


RICHARD LEE
PRIMARY EXAMINER

Richard Lee/rl

9/18/00

